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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,353	09/30/2003	Kevin B. Sparks	SP03-136	7143

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CORNING INCORPORATED
SP-TI-3-1
CORNING, NY 14831

EXAMINER

DOAN, JENNIFER

ART UNIT	PAPER NUMBER
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2874

DATE MAILED: 09/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/676,353

Applicant(s)

SPARKS, KEVIN B. 

Examiner

Jennifer Doan

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 17-19 is/are rejected.
- 7) ☒ Claim(s) 13-16, 20 and 21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>061005 & 010904</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The prior art documents submitted by applicant in the Information Disclosure Statements filed on 01/09/04 and 06/10/05, have all been considered and made of record (note the attached copy of form PTO-1449).

Drawings

2. The drawings, filed on 09/30/2003, are accepted.

Specification

3. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-12 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (U.S. Patent 6,205,279).

With respect to claims 1-4, 8, 9 and 11, Kim et al (figure 3) disclose an optical fiber comprising a central core having a relative refractive index delta Δ_c , a multi-pedestal region in contact with and surrounding the core, the multi-pedestal region having an outer radius and at least two pedestals, each of the pedestals being in contact with and adjacent to at least one other pedestal, each of the pedestals having a relative refractive index delta Δ_{ped} lower than Δ_c , and another region in contact and surrounding the multi-pedestal region, the another region having relative refractive index delta which is lower than that of any pedestal (column 4, lines 34-58); wherein the another region is cladding (8), the cladding having an index of refraction n_{cl} which is lower than that of any pedestal.

Kim et al. do not disclose the multi-pedestal region having an outer radius of less than 25 μm ; at least one of the pedestals having Δ_{ped} value higher than 0.2%, a width of less than 6 μm ; at least one of the pedestals having Δ_{ped} value lower than 0.2%.

However, the outer radius of the pedestal region of less than 25 μm ; at least one of the pedestals having Δ_{ped} value higher than 0.2%, a width of less than 6 μm ; at least one of the pedestals having Δ_{ped} value lower than 0.2% are considered to be obvious, since the efficiency of the optical transmission is dependent on the size of the pedestal region. Such an element would advantageously provide a highly efficient transmission of optical signal. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the fiber of Kim's device with the values as claimed to transmit the light beam for the purpose of obtaining the highly

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efficient transmission of optical signal, and it also has been held that discovering an optimum value of a result effective variable involves only routine skill in the art and it is noted that the applicant does not disclose criticality in the value claimed. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980) (see MPEP § 2144.05).

With respect to claims 5, 7 and 10, Kim et al. substantially disclose all the limitations of the claimed invention except the widths of the pedestals is 0.2 to 5 μm and the pedestal has Δped value $0.3\% < \Delta\text{ped} < 0.7\%$.

However, the widths of the pedestals being 0.2 to 5 μm and the pedestal having Δped value $0.3\% < \Delta\text{ped} < 0.7\%$ are considered to be obvious, since the efficiency of the optical transmission is dependent on the dimension of the pedestal region. Such an element would advantageously provide a highly efficient transmission of optical signal. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the pedestal of the fiber of Kim's device within the range as claimed for the purpose of obtaining the efficient optical signal transmission, and it also has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art and it is noted that the applicant does not disclose criticality in the ranges claimed. *In re Aller*, 105 USPQ 233 (see MPEP § 2144.05).

With respect to claims 6 and 12, Kim et al. substantially disclose all the limitations of the claimed invention except the fiber has MFD between 6-8 μm at 1550 nm.

However, the MFD between 6-8 μm at 1550 nm is considered to be obvious, since the efficiency of the optical transmission is dependent on mode coupling of the fiber. Such an element would advantageously provide a highly efficient transmission of optical signal. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the fiber of Kim's device within the MFD range as claimed for the purpose of obtaining the efficient optical signal transmission, and it also has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art and it is noted that the applicant does not disclose criticality in the ranges claimed. *In re Aller*, 105 USPQ 233 (see MPEP § 2144.05).

With respect to claim 17, Kim et al. substantially disclose all the limitations of the claimed invention except a region of the fiber that has Ge doping of 2 wt % to 17 wt%.

However, the region of the fiber that having Ge doping of 2 wt % to 17 wt% is considered to be obvious, since the efficiency of the optical transmission is dependent on mode coupling of the fiber. Such an element would advantageously provide a highly efficient transmission of optical signal. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the fiber of Kim's device within the Ge doping range as claimed for the purpose of obtaining the efficient optical signal transmission, and it also has been held that where the general

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conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art and it is noted that the applicant does not disclose criticality in the ranges claimed. *In re Aller*, 105 USPQ 233 (see MPEP § 2144.05).

With respect to claims 18 and 19, Kim et al. substantially disclose all the limitations of the claimed invention except the optical fiber has a central core radius $0.8 \mu\text{m} \leq R_c \leq 2.5 \mu\text{m}$.

However, the optical fiber having a central core radius $0.8 \mu\text{m} \leq R_c \leq 2.5 \mu\text{m}$ is considered to be obvious, since the efficiency of the optical transmission is dependent on core dimension of the fiber. Such an element would advantageously provide a highly efficient transmission of optical signal. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the fiber of Kim's device within the central core radius range as claimed for the purpose of obtaining the efficient optical signal transmission, and it also has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art and it is noted that the applicant does not disclose criticality in the ranges claimed. *In re Aller*, 105 USPQ 233 (see MPEP § 2144.05).

Allowable Subject Matter

6. Claims 13-16, 20 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Terasawa et al. (U.S. 5,822,488) and Oh et al. (U.S. 5,761,366) disclose an optical fiber for optical signal transmission.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer Doan whose telephone number is (571) 272-2346. The examiner can normally be reached on Monday to Thursday from 6:00 am to 3:30 pm, second Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink that reads "Jennifer Doan". The signature is written in a cursive style with a large, stylized 'J' and 'D'.

Jennifer Doan

Patent examiner

September 2, 2005